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ACOUSTICS PLUS

Proposed Installation of Mechanical Plant

113 Regents Park Road, London, NW1

Environmental Noise Assessment

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Proposed Installation of Mechanical Plant	
Project Address:	113 Regents Park Road, London NW1 8UR
Project Reference:	102788

Issue/Revision Record

Issue:	Date:	Remarks:	Author:
1	25/09/2014	First Issue	Phil Huffer
2	05/12/2014	Revised plant layout	Phil Huffer

	Signature:	Print:	Title:	Date:
Author:		**Phil Huffer**	**Principal Consultant**	**05/12/2014**
Reviewer:		**Andy Dodd**	**Senior Consultant**	**05/12/2014**

1. INTRODUCTION

1.1 Acoustics Plus Ltd (APL) is an independent firm of multi-disciplinary acoustic engineers. APL is engaged by both private and public sector clients.

1.2 APL is a registered member of The Association of Noise Consultants (ANC) and the author is a corporate member of The Institute of Acoustics (IOA).

1.3 APL has been instructed by the applicants M&E consultant, The Kut Partnership, to consider and advise upon the noise implications of the proposed installation of externally located mechanical plant.

1.4 The proposed climate control system will consist of three outdoor air condenser units that will be mounted within a store room located at the rear of the premises.

1.5 It is understood the Local Planning Authority (LPA) require further information on noise levels from the proposed installation in order to fully assess the noise impact upon the surrounding neighbourhood.

1.6 This report provides the response to the LPA, on behalf of the Applicant.

2. BASELINE SITUATION

2.1 The Application Site (the "site") is situated at 113 Regents Park Road, London, NW1. The site is currently arranged as B1 offices over ground, first and second floor levels and occupied by Bibendum Wine Ltd.

2.2 The proposal for development is a change of use development with residential accommodation located at ground, first and second floor levels. The site location and its proximity to adjacent noise sensitive premises is shown in Diagram 1 below and in Figures 1 to 8 (attached).

Diagram 1

2.3 It is proposed to excavate the store room floor and locate three outdoor condenser units within the sub-basement store room. Ventilation to the area will be provided passively by an acoustically attenuated discharge duct and acoustically attenuated air intakes into the rear car park. The intake and discharge points will be through acoustic louvres for further attenuation. The location of the store and hence proposed position of the air condenser units is shown in Figure 7. The specific details of the store room arrangement is shown in Diagram 2 overleaf.

2.4 It is anticipated that the nearest noise sensitive façade will belong to the ground floor rear windows of the proposed new residential accommodation (as indicated in Figure 4). The distance from the location of the nearest noise sensitive façade to the louvres was approximated from measurements made onsite to be 2m.

2.5 Information in regard of the noise level from the air condenser units has been provided by Mitsubishi HVAC (copy of the data sheet is provided in Appendix A). The units are itemised below:

(a) 1No. Mitsubishi PURY-P400YJM
(b) 1No. Mitsubishi PURY-P250YJM
(c) 1No. Mitsubishi PURY-P200YJM

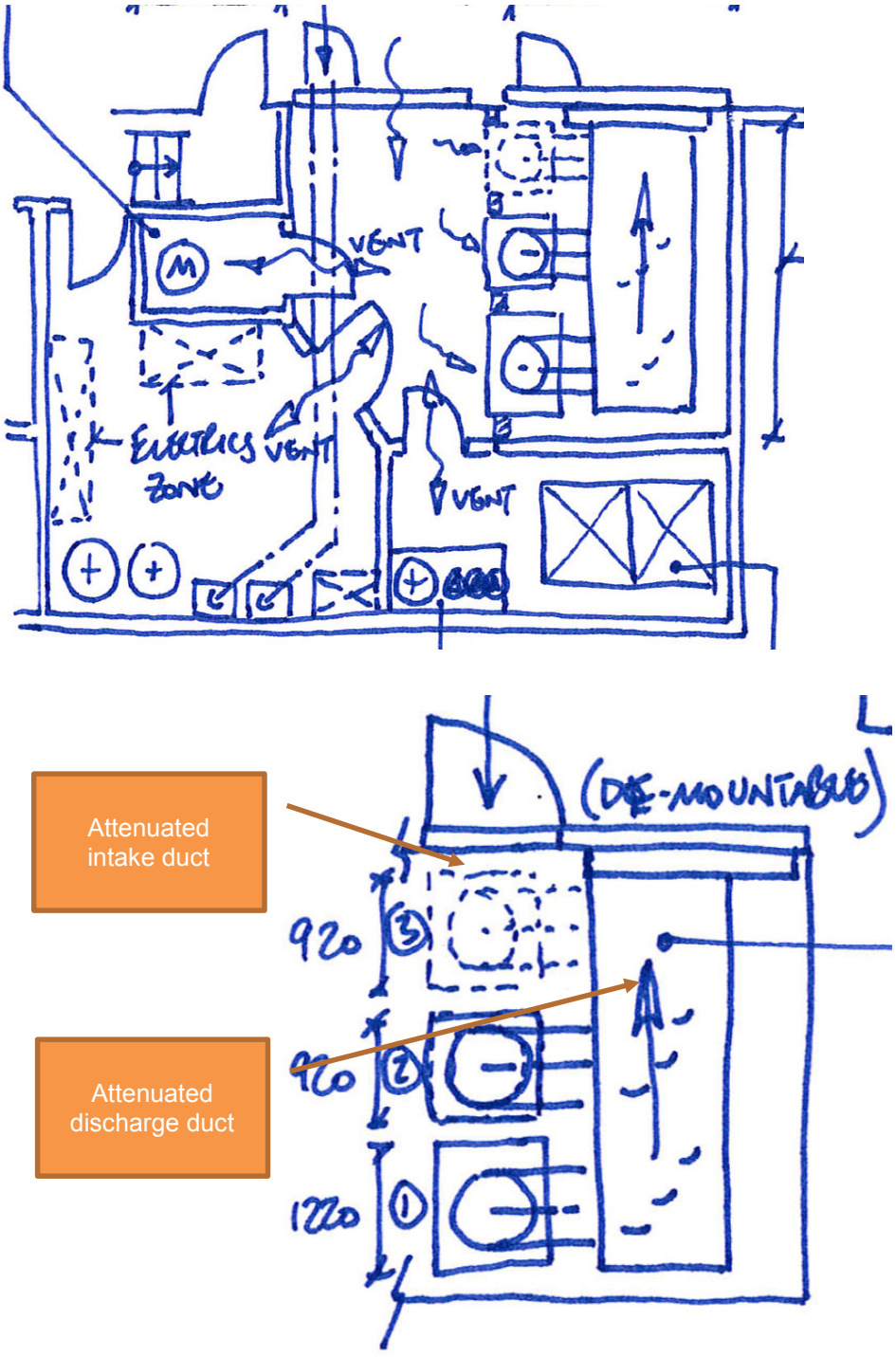


Diagram 2

3. NOISE OUTLINE

3.1 In order to produce an environmental noise assessment, consideration must be given to the prevailing background noise in the locality of the installation.

3.2 Measurements of background noise were obtained over a 24 hour period at a location deemed representative of background noise levels experienced at the nearest noise sensitive façade.

3.3 The measurements obtained during the exercise were obtained at first floor level at the rear of 113 Regents Park Road.

3.4 The particulars of the measurement exercise are recorded below:

Date:	22nd – 23rd September 2014
Start Time:	11:54 hrs
Location:	first floor rear window, 113 Regents Park Road
Weather:	No rain, light wind.

3.5 The measurements carried out during the exercise are recorded below:

L_{90} percentile level (dB re 20μPa) at 15 minute intervals

3.6 The measurements obtained during the exercise are presented in Appendix B.

3.7 Minimum background and average noise levels are shown in Table 1 below:

WHO period	Lowest $L_{A90,15min}$	Average $L_{Aeq,T}$
07:00-19:00hrs	40 dB	50 dB
19:00-23:00hrs	38 dB	45 dB
23:00-07:00hrs	35 dB	42 dB

Table 1

3.8 The noise level of the proposed plant was established from the data sheet provided (Appendix A) as follows:

a)	*1No. Mitsubishi PURY-P400YJM*	*L_p 61dBA @ 1m (standard mode)* *L_p 53dBA @ 1m (night mode)*
b)	*1No. Mitsubishi PURY-P250YJM*	*L_p 57dBA @ 1m (standard mode)* *L_p 44dBA @ 1m (night mode)*
c)	*1No. Mitsubishi PURY-P200YJM*	*L_p 56dBA @ 1m (standard mode)* *L_p 44dBA @ 1m (night mode)*

4. DESIGN CRITERIA

4.1 Information regarding the noise levels not to be exceeded by the proposed installation of externally located mechanical plant was provided by the LPA (London Borough of Camden). The Local Development Framework 2010-2025 Section DP28 (Table E) Noise and Vibration states:

Noise description and location of measurement	Period	Time	Noise level
Noise at 1 metre external to a sensitive façade	Day, evening and night	0000-2400	5dBA<LA90
Noise that has a distinguishable discrete continuous note (whine, hiss, screech, hum) at 1 metre external to a sensitive façade.	Day, evening and night	0000-2400	10dBA <LA90
Noise that has distinct impulses (bangs, clicks, clatters, thumps) at 1 metre external to a sensitive façade.	Day, evening and night	0000-2400	10dBA<LA90
Noise at 1 metre external to sensitive façade where LA90>60dB	Day, evening and night	0000-2400	55dBLAeq

Table 2

4.2 It is expected that the proposed condenser units will not generate tonal noise. The plant noise emission criteria that should not be exceeded is therefore based on Table 2 above and is shown in Table 3 below. These levels should not be exceeded at the nearest noise sensitive premises, considered to be the first floor flats.

Daytime and evening noise emission limit for mechanical plant	Night time noise emission limit for mechanical plant
L_{Aeq} 33dB	L_{Aeq} 30dB

Table 3

5. EQUIPMENT

5.1 All measurements were obtained using the following equipment:

- Norsonic Precision Sound Level Meter Type NOR140 Serial No. 1403466
- Rion Calibrator Type NC-74 Class 1 Serial No. 00410215

5.2 The relevant equipment carries full and current traceable calibration. The equipment, where necessary, was calibrated prior to and after the measurements were carried out.

6. CALCULATIONS

6.1 Given the proposed location of the condensing units, the egress of noise from the condensing units through the discharge and intake duct to the window of the noise sensitive property has been considered.

6.2 In considering the propagation of noise from the condensers, consideration was given to the following equation.

$SPL_2 = SPL_1 – R – 6$

Where SPL_1 is the sound pressure level on the source side of the ducts
SPL_2 is the sound pressure level close to the ducts on the outside
R is the sound reduction index of the intake, discharge attenuators & acoustic louvre

6.3 The sound reduction of the acoustic attenuators was provided by Allaway Acoustics as follows (see Appendix A).

Attenuator	R_w Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Discharge	7	12	17	23	34	30	25	19	
Intake	6	10	15	20	26	22	17	11	

Table 4

6.4 The sound reduction of the acoustic louvre was provided by Gilberts as follows (see Appendix A).

Acoustic Louvre	R_w Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Series 15	4	4	6	9	12	17	11	10	

Table 5

6.5 A prediction exercise was undertaken. The calculation exercise utilised information provided by Mitsubishi HVAC (copy of the data sheets is provided in Appendix A).

6.6 The total attenuation was calculated by considering distance attenuation from the location of the condenser units to the nearest noise sensitive façade. For the purposes of this assessment it has been assumed that the plant room containing the condenser units would be lined with an acoustically absorbent plant room wall lining system to minimise the creation of reverberant sound.

6.7 For the purposes of the calculation exercise and in the absence of any detailed directivity noise data from Mitsubishi, it was assumed the documented total noise output from the condenser unit was split 50:50 between vertical noise egress from fan noise and re-radiated casing noise output from compressor noise.

6.8 The following two scenarios were considered:

*(a) Noise impact of daytime use of the condenser units in **standard** mode;*

*(b) Noise impact of night time use of the condenser units in **night** mode.*

Noise impact (a)

6.9 The noise level from the condenser units was propagated through the discharge attenuator to the nearest noise sensitive façade using point source propagation over 2m. The calculation can be shown as follows:

Standard Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P400	70	63	60	55	52	48	45	38	58
Discharge attenuator	7	12	17	23	34	30	25	19	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	47	35	24	11	0	0	0	0	24

Table 6

Standard Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P250	56	59	57	51	48	43	38	32	54
Discharge attenuator	7	12	17	23	34	30	25	19	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	33	31	22	7	0	0	0	0	18

Table 7

Standard Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P200	60	58	56	50	47	43	38	32	53
Discharge attenuator	7	12	17	23	34	30	25	19	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	36	30	20	6	0	0	0	0	18

Table 8

6.10 The noise level from the condenser units was propagated through the intake attenuator to the nearest noise sensitive façade using point source propagation over 2m. The calculation can be shown as follows:

Standard Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P400	70	63	60	55	52	48	45	38	58
Intake attenuator	3	6	10	14	17	13	9	6	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	51	41	31	20	10	6	12	10	30

Table 9

Standard Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P250	56	59	57	51	48	43	38	32	54
Intake attenuator	3	6	10	14	17	13	9	6	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	37	37	29	16	6	1	6	4	24

Table 10

Standard Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P200	60	58	56	50	47	43	38	32	53
Intake attenuator	3	6	10	14	17	13	9	6	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	40	36	27	15	6	1	6	4	24

Table 11

6.11 The total noise impact of the condenser units, when used in standard mode during the day can be calculated as 32dBA.

6.12 In order to comply with the requirements of the LPA, any noise from the proposed installation of mechanical plant should not exceed a level of 33 dBA (5dB below the lowest measured background noise over the daytime operation of the plant) at 1m from the nearest noise sensitive facade.

6.13 The lowest measured background noise during the daytime period (07:00-23:00hrs) was $L_{A90,15min}$ 38dB that occurred during the period between 21:39hrs to 21:54hrs on 22nd September 2014. The calculated noise impact is 32dBA. The calculation exercise (Tables 6 to 11) demonstrates that the proposed installation meets the LPA criteria by 3dB.

Noise impact (b)

6.14 The noise level from the condenser units was propagated through the discharge attenuator to the nearest noise sensitive façade using point source propagation over 2m. The calculation can be shown as follows:

Night Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P400	51	52	47	43	43	44	42	38	50
Discharge attenuator	7	12	17	23	34	30	25	19	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	28	24	12	0	0	0	0	0	12

Table 12

Night Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P250	55	51	41	36	34	30	28	22	41
Discharge attenuator	7	12	17	23	34	30	25	19	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	32	22	6	0	0	0	0	0	11

Table 13

Night Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P200	54	46	43	36	36	30	30	23	41
Discharge attenuator	7	12	17	23	34	30	25	19	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	30	17	8	0	0	0	0	0	10

Table 14

6.15 The noise level from the condenser units was propagated through the intake attenuator to the nearest noise sensitive façade using point source propagation over 2m. The calculation can be shown as follows:

Night Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P400	51	52	47	43	43	44	42	38	50
Intake attenuator	3	6	10	14	17	13	9	6	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	32	30	19	8	1	2	10	10	18

Table 15

Night Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P250	55	51	41	36	34	30	28	22	41
Intake attenuator	3	6	10	14	17	13	9	6	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	36	28	13	1	0	0	0	0	15

Table 16

Night Mode	Octave Band Centre Frequency (Hz)								dBA
	63	125	250	500	1k	2k	4k	8k	
Mitsubishi PURY-P200	54	46	43	36	36	30	30	23	41
Intake attenuator	3	6	10	14	17	13	9	6	
Distance attenuation	-6	-6	-6	-6	-6	-6	-6	-6	
Acoustic louvre	4	4	6	9	12	17	11	10	
Reverberant correction	0	0	0	0	0	0	0	0	
Façade level	34	23	15	1	0	0	0	0	13

Table 17

6.16 The total noise impact of the condenser units, when used in night mode during the night time can be calculated as 22dBA.

6.17 In order to comply with the requirements of the LPA, any noise from the proposed installation of mechanical plant should not exceed a level of 30 dBA (5dB below the lowest measured background noise over the night time operation of the plant) at 1m from the nearest noise sensitive facade.

6.18 The lowest measured background noise during the night time period (23:00-07:00hrs) was $L_{A90,15min}$ 35dB that occurred during a number of periods between 03:24hrs and 03:39hrs on 23rd September 2014. The calculated noise impact is 22dBA. The calculation exercise (Tables 12 to 17) demonstrates that the proposed installation meets the LPA criteria by 8dB.

7. CONCLUSION & MITIGATION MEASURES

7.1 The foregoing assessment indicates that the proposed installation will meet the requirements imposed by the LPA. Additional mitigation measures, other than those included in the design will not be required.

7.2 The calculation exercise is based on the use of discharge and intake attenuators and an acoustic louvre for the grill. These measures must be incorporated and permanently retained to meet the LPA requirements.

7.3 It is also based on the assumption that the plant room will be lined with an acoustically absorbent plant room wall lining system such as that manufactured by CMS Danskin.

Figures

Proposed installation of external mechanical plant, 113 Regents Park Road

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

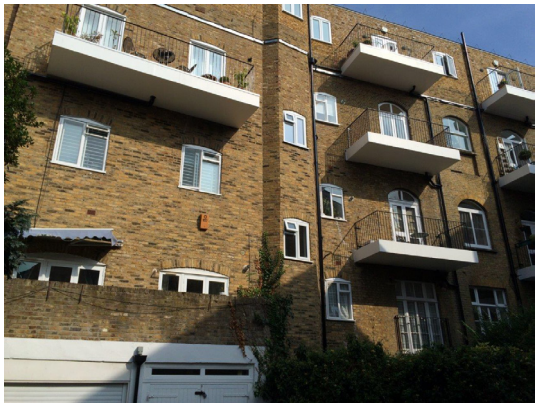


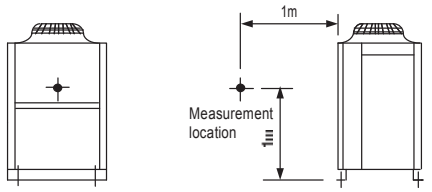
Figure 6

Figure 7

Figure 8

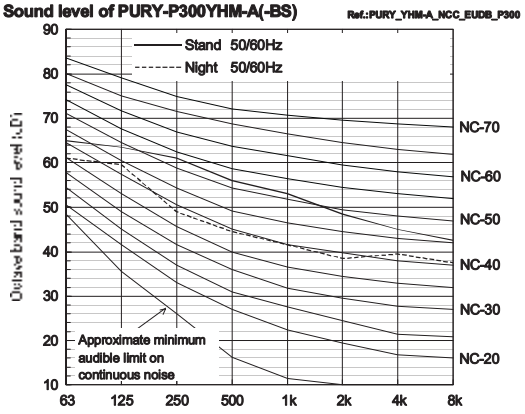
Appendix A

Measurement condition
PURY-P200,250,300YHM-A(-BS)



Ref.:PURY_YHM-A_NCC_EUDB_P200-P300_R1

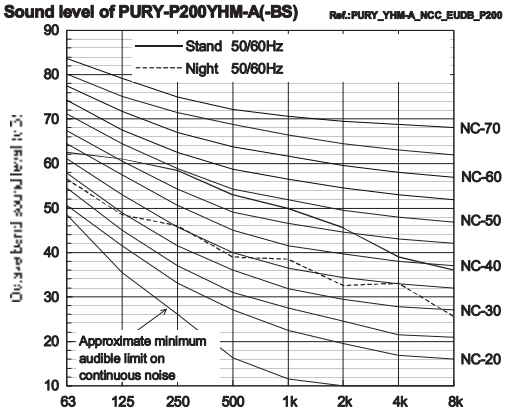
Sound level of PURY-P300YHM-A(-BS) Ref.:PURY_YHM-A_NCC_EUDB_P300



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	65.0	63.5	61.0	56.0	53.0	48.5	45.0	42.5	59.0
Night Mode	50/60Hz	61.0	59.5	49.0	44.5	41.5	38.5	39.5	37.5	50.0

When Night Mode is set,the A/C system's capacity is limited. The system could return to normal operation from Night Mode automatically in the case that the operation condition is severe.

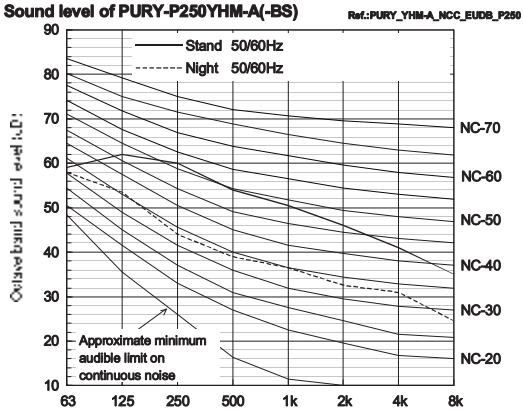
Sound level of PURY-P200YHM-A(-BS) Ref.:PURY_YHM-A_NCC_EUDB_P200



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	62.5	61.0	58.5	53.0	50.0	45.5	39.0	36.0	56.0
Night Mode	50/60Hz	56.5	48.5	46.0	39.0	38.5	32.5	33.0	25.5	44.0

When Night Mode is set,the A/C system's capacity is limited. The system could return to normal operation from Night Mode automatically in the case that the operation condition is severe.

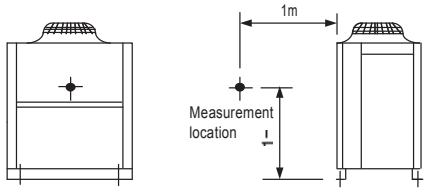
Sound level of PURY-P250YHM-A(-BS) Ref.:PURY_YHM-A_NCC_EUDB_P250



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	59.0	62.0	60.0	54.0	50.5	46.0	41.0	35.0	57.0
Night Mode	50/60Hz	58.0	53.5	44.0	39.0	36.5	32.5	31.0	24.5	44.0

When Night Mode is set,the A/C system's capacity is limited. The system could return to normal operation from Night Mode automatically in the case that the operation condition is severe.

Measurement condition
PURY-P350,400YHM-A(-BS)



Ref.:PURY_YHM-A_NCC_EUDB_P350-P400_R1

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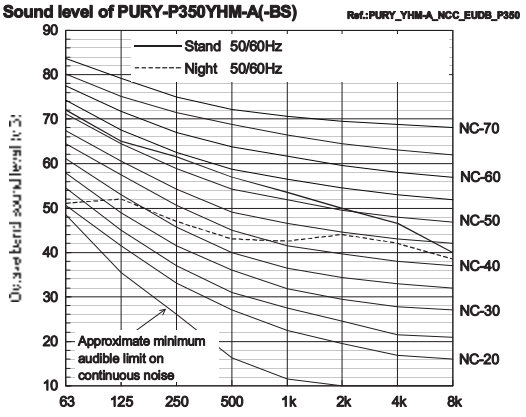
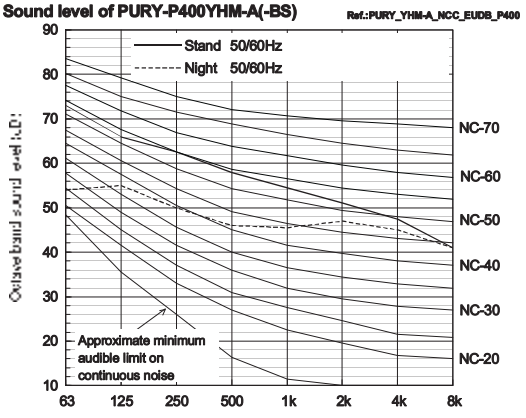


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	72.0	65.0	61.5	57.0	53.5	50.0	46.5	40.0	60.0
Night Mode	50/60Hz	51.0	52.0	47.0	43.0	42.5	44.0	42.0	38.5	50.0

When Night Mode is set,the A/C system's capacity is limited. The system could return to normal operation from Night Mode automatically in the case that the operation condition is severe.

Sound level of PURY-P400YHM-A(-BS) Ref.:PURY_YHM-A_NCC_EUDB_P400



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.0	66.0	62.5	58.0	54.5	51.0	47.5	41.0	61.0
Night Mode	50/60Hz	54.0	55.0	50.0	46.0	45.5	47.0	45.0	41.0	53.0

When Night Mode is set,the A/C system's capacity is limited. The system could return to normal operation from Night Mode automatically in the case that the operation condition is severe.

ALLAWAY ACOUSTICS LTD

PROJECT NAME:
DATE: 25/09/2014

PROJECT No:
SCHEDULE No:

EQUIPMENT SCHEDULE

Item	System Reference	Suffix	DWG	L1	L2/ID	W	H/Dia	Vol	PD	Wt		Performance, dB							
				mm	mm	mm	mm	m^3/s	Pa	kg		63	125	250	500	1k	2k	4k	8k
1	DISCHARGE	G	A02E	600		1200	1500	3.08	30	139	IL	7	12	17	23	34	30	25	19
2	INLET	G	A02E	600		1800	1000	3.08	10	136	IL	6	10	15	20	26	22	17	11

NOTES:
LABEL WITH ITEM NO. & SYSTEM REF.
IL = STATIC INSERTION LOSS (dB)

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Email: enquiries@allawayacoustics.co.uk Web: www.allawayacoustics.co.uk

SERIES 15, 27 & 30 Acoustic Weather Louvres

Louvres 5
June 2003

Introduction

Gilberts acoustic weather louvre ranges interface directly with the exterior fabric of a building in either steelwork frames and cladding or brickwork.

Primarily utilised where a combination of good weathering protection and accurate noise emission control are required, the louvre can be manufactured to accommodate the various dimensional and aesthetic requirements a project may demand. With size ranges from 300 x 300 to 1500-2000 in single assemblies, larger formats can be accommodated by the use of a modular approach to assist on site handling and installation. The louvre is available with a channel frame housing for side or rear fixing and 50mm flange for front face fixing.

Construction

Standard construction comprises of outer casings of not less than 1.2mm galvanised mild steel with outer faces at the top and bottom support sections not less than 0.7mm. Inner absorptive faces will not be less than 0.7mm galvanised perforated mild steel sheet.

Materials and finishes available include stainless steel, anodised aluminium and aluminium with a polyester powder or synthapulvin paint finish to the BS/RAL colour range. The mineral wool acoustic infill is organic, flame, moisture and vermin proof with a minimum density of 48 Kg/m3. It is packed under compression to prevent voids due to settlement. Bird guards or insect screens can be fitted if required.

PERFORMANCE DATA

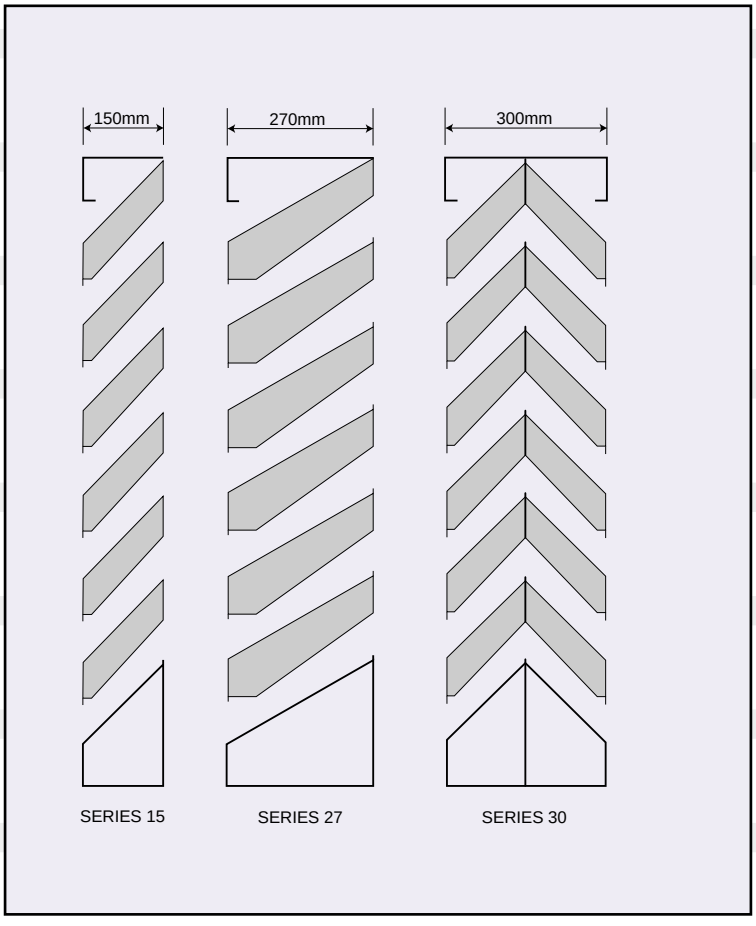
	Octave bands								
	63	125	250	500	1k	2k	4k	8k	Hz
Series 15 Transmission Loss	4	4	6	9	12	17	11	10	dB
Series 27 Transmission Loss	6	7	10	13	17	19	13	11	dB
Series 30 Transmission Loss	6	6	9	14	21	29	27	27	dB

Performance test in accordance with BS 2750:1980

Transmission Loss
This is the acoustic performance (dB) of an acoustic louvre to BS 2750:1980 and is defined as the ratio, in decibels, of acoustic energy transmitted through the louvre sample to that which is incident upon it. Also expressed as Sound Reduction Index SRI.

The aerodynamic performance of single acoustic louvres is as follows:-

Face Velocity (m/s)	Series 15 (N/m^2)(Pa)	Series 27 (N/m^2)(Pa)	Series 30 (N/m^2)(Pa)
1.0	10	10	20
1.5	15	17	27
2.0	20	24	34
2.5	28	35	45
3.0	40	50	56
Weight per m^2(kg)	30	55	60



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Appendix B

Background noise measurements obtained at rear of 113 Regents Park Road, London

No	Date & time	Filename	[hh:mm:ss]	MAX [dB]	MIN [dB]	LEQ [dB]	L10	L90
1	22/09/2014 11:54:40	@BBD0017	00:15:00	77	41	61	63	43
2	22/09/2014 12:09:40	@RPR0001	00:15:00	61	39	46	49	40
3	22/09/2014 12:24:40	@RPR0002	00:15:00	63	40	48	52	41
4	22/09/2014 12:39:40	@RPR0003	00:15:00	61	40	49	52	42
5	22/09/2014 12:54:40	@RPR0004	00:15:00	64	40	49	53	41
6	22/09/2014 13:09:40	@RPR0005	00:15:00	73	42	56	57	44
7	22/09/2014 13:24:40	@RPR0006	00:15:00	74	41	60	64	42
8	22/09/2014 13:39:40	@RPR0007	00:15:00	62	40	49	52	42
9	22/09/2014 13:54:40	@RPR0008	00:15:00	59	39	45	47	40
10	22/09/2014 14:09:40	@RPR0009	00:15:00	62	39	51	55	41
11	22/09/2014 14:24:40	@RPR0010	00:15:00	63	41	49	52	42
12	22/09/2014 14:39:40	@RPR0011	00:15:00	62	40	49	52	41
13	22/09/2014 14:54:40	@RPR0012	00:15:00	63	39	48	52	40
14	22/09/2014 15:09:40	@RPR0013	00:15:00	64	40	50	54	42
15	22/09/2014 15:24:40	@RPR0014	00:15:00	59	39	46	49	41
16	22/09/2014 15:39:40	@RPR0015	00:15:00	60	40	49	54	41
17	22/09/2014 15:54:40	@RPR0016	00:15:00	60	39	46	50	40
18	22/09/2014 16:09:40	@RPR0017	00:15:00	63	41	50	53	43
19	22/09/2014 16:24:40	@RPR0018	00:15:00	65	46	53	55	47
20	22/09/2014 16:39:40	@RPR0019	00:15:00	62	40	50	53	42
21	22/09/2014 16:54:40	@RPR0020	00:15:00	63	42	52	55	45
22	22/09/2014 17:09:40	@RPR0021	00:15:00	74	41	54	55	43
23	22/09/2014 17:24:40	@RPR0022	00:15:00	61	39	49	53	41
24	22/09/2014 17:39:40	@RPR0023	00:15:00	62	40	50	54	42
25	22/09/2014 17:54:40	@RPR0024	00:15:00	59	40	46	47	41
26	22/09/2014 18:09:40	@RPR0025	00:15:00	64	41	51	54	42
27	22/09/2014 18:24:40	@RPR0026	00:15:00	64	40	49	53	41
28	22/09/2014 18:39:40	@RPR0027	00:15:00	61	39	50	55	41
29	22/09/2014 18:54:40	@RPR0028	00:15:00	67	48	54	57	49
30	22/09/2014 19:09:40	@RPR0029	00:15:00	58	39	47	50	41
31	22/09/2014 19:24:40	@RPR0030	00:15:00	59	40	47	51	41
32	22/09/2014 19:39:40	@RPR0031	00:15:00	56	39	48	52	40
33	22/09/2014 19:54:40	@RPR0032	00:15:00	57	39	44	47	40
34	22/09/2014 20:09:40	@RPR0033	00:15:00	61	39	47	51	40
35	22/09/2014 20:24:40	@RPR0034	00:15:00	56	39	46	49	39
36	22/09/2014 20:39:40	@RPR0035	00:15:00	58	39	47	51	41
37	22/09/2014 20:54:40	@RPR0036	00:15:00	56	39	44	45	40
38	22/09/2014 21:09:40	@RPR0037	00:15:00	55	39	45	49	40
39	22/09/2014 21:24:40	@RPR0038	00:15:00	52	39	45	48	40
40	22/09/2014 21:39:40	@RPR0039	00:15:00	48	38	42	44	38
41	22/09/2014 21:54:40	@RPR0040	00:15:00	54	40	45	47	41
42	22/09/2014 22:09:40	@RPR0041	00:15:00	54	41	44	47	42
43	22/09/2014 22:24:40	@RPR0042	00:15:00	50	40	44	48	41
44	22/09/2014 22:39:40	@RPR0043	00:15:00	51	40	44	46	41
45	22/09/2014 22:54:40	@RPR0044	00:15:00	49	39	42	44	40
46	22/09/2014 23:09:40	@RPR0045	00:15:00	47	39	41	43	39
47	22/09/2014 23:24:40	@RPR0046	00:15:00	46	39	41	43	39
48	22/09/2014 23:39:40	@RPR0047	00:15:00	46	39	41	44	39

Lowest day time background noise LA90 38dB

Background noise measurements obtained at rear of 113 Regents Park Road, London

No	Date & time	Filename	[hh:mm:ss]	MAX [dB]	MIN [dB]	LEQ [dB]	L10	L90
49	22/09/2014 23:54:40	@RPR0048	00:15:00	48	39	43	45	40
50	23/09/2014 00:09:40	@RPR0049	00:15:00	53	42	47	50	43
51	23/09/2014 00:24:40	@RPR0050	00:15:00	47	38	41	44	39
52	23/09/2014 00:39:40	@RPR0051	00:15:00	45	37	40	42	38
53	23/09/2014 00:54:40	@RPR0052	00:15:00	43	37	39	41	37
54	23/09/2014 01:09:40	@RPR0053	00:15:00	49	37	41	43	37
55	23/09/2014 01:24:40	@RPR0054	00:15:00	49	38	42	44	39
56	23/09/2014 01:39:40	@RPR0055	00:15:00	43	35	38	40	36
57	23/09/2014 01:54:40	@RPR0056	00:15:00	48	37	40	42	38
58	23/09/2014 02:09:40	@RPR0057	00:15:00	43	35	38	38	35
59	23/09/2014 02:24:40	@RPR0058	00:15:00	41	35	38	38	36
60	23/09/2014 02:39:40	@RPR0059	00:15:00	42	35	38	39	36
61	23/09/2014 02:54:40	@RPR0060	00:15:00	40	35	37	38	36
62	23/09/2014 03:09:40	@RPR0061	00:15:00	50	36	39	41	36
63	23/09/2014 03:24:40	@RPR0062	00:15:00	46	35	37	38	35
64	23/09/2014 03:39:40	@RPR0063	00:15:00	49	37	42	44	38
65	23/09/2014 03:54:40	@RPR0064	00:15:00	42	35	37	39	36
66	23/09/2014 04:09:40	@RPR0065	00:15:00	42	35	37	39	36
67	23/09/2014 04:24:40	@RPR0066	00:15:00	45	35	39	41	36
68	23/09/2014 04:39:40	@RPR0067	00:15:00	51	37	41	44	38
69	23/09/2014 04:54:40	@RPR0068	00:15:00	47	36	39	41	36
70	23/09/2014 05:09:40	@RPR0069	00:15:00	47	37	40	41	37
71	23/09/2014 05:24:40	@RPR0070	00:15:00	52	38	40	41	39
72	23/09/2014 05:39:40	@RPR0071	00:15:00	77	41	61	63	43
73	23/09/2014 05:54:40	@RPR0072	00:15:00	51	41	43	45	41
74	23/09/2014 06:09:40	@RPR0073	00:15:00	57	41	46	50	42
75	23/09/2014 06:24:40	@RPR0074	00:15:00	62	41	48	51	42
76	23/09/2014 06:39:40	@RPR0075	00:15:00	62	42	49	53	43
77	23/09/2014 06:54:40	@RPR0076	00:15:00	59	42	48	51	43
78	23/09/2014 07:09:40	@RPR0077	00:15:00	59	44	49	52	44
79	23/09/2014 07:24:40	@RPR0078	00:15:00	56	44	48	50	45
80	23/09/2014 07:39:40	@RPR0079	00:15:00	59	45	49	52	45
81	23/09/2014 07:54:40	@RPR0080	00:15:00	59	44	48	51	45
82	23/09/2014 08:09:40	@RPR0081	00:15:00	59	44	49	53	45
83	23/09/2014 08:24:40	@RPR0082	00:15:00	61	44	49	52	45
84	23/09/2014 08:39:40	@RPR0083	00:15:00	63	44	50	53	45
85	23/09/2014 08:54:40	@RPR0084	00:15:00	63	43	50	53	44
86	23/09/2014 09:09:40	@RPR0085	00:15:00	65	43	52	56	45
87	23/09/2014 09:24:40	@RPR0086	00:15:00	66	44	53	59	45
88	23/09/2014 09:39:40	@RPR0087	00:15:00	64	44	56	60	45
89	23/09/2014 09:54:40	@RPR0088	00:15:00	61	42	48	51	43
90	23/09/2014 10:09:40	@RPR0089	00:15:00	62	42	51	55	43
91	23/09/2014 10:24:40	@RPR0090	00:15:00	56	44	48	51	45
92	23/09/2014 10:39:40	@RPR0091	00:15:00	73	42	53	52	43
93	23/09/2014 10:54:40	@RPR0092	00:15:00	65	42	51	53	44
94	23/09/2014 11:09:40	@RPR0093	00:15:00	79	43	61	61	45
95	23/09/2014 11:24:40	@RPR0094	00:15:00	67	42	49	50	43
96	23/09/2014 11:39:40	@RPR0095	00:15:00	66	42	51	54	44

Lowest night time background noise LA90 35dB